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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/578,478

06/07/2006

David James

TPP 32003

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77176

7590

11/18/2008

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EXAMINER

BERMAN, SUSAN W

ART UNIT

PAPER NUMBER

1796

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/578,478	<b>Applicant(s)</b> JAMES ET AL.	
	<b>Examiner</b> /Susan W. Berman/	<b>Art Unit</b> 1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5-8-06</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

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***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1: The use of abbreviations UV, IR and EB renders the claims indefinite and should be replaced with “ultraviolet (UV), infrared (IR) and electron beam (EB)” if that is what applicant intended. The use of “such as” renders the claims indefinite. Does applicant intend to claim “radiation selected from the group consisting of ultraviolet, infrared and electron beam”? Does applicant intend to claim “additional components selected from the group consisting of pigment, filler, reactive diluent, neutralizing additive, flow additive and leveling additive”? In lines 8-9, does applicant intend to claim hydroxyl functionality of “at least 4” or “of at least 4 to 32” or one of the recited amounts? In lines 10-11, the use of the word “obtainable” instead of “obtained” renders the claim indefinite with respect to the adduct. In line 13, “and that said...” should be rewritten “and wherein said...”. In lines 14-16, it is not clear what is intended to be claimed because of the multiple uses of “or”, and “and/or”. It is suggested that applicant use Markush language to set forth the selections for oligomer or polymer. For example: “oligomer or polymer selected from the group consisting of unsaturated polyester, unsaturated polyether, polyester acrylate, polyether acrylate,...” etc. It is not clear what kinds of “methacrylate or  $\beta$ -methyl acrylate” – this terminology encompasses all known (meth)acrylate compounds. It is not clear what is meant by “acrylic, methacrylic or  $\beta$ -methyl acrylic modified fumarate ester or polyester” Polyester acrylate has been previously recited. How is the fumaric

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ester modified by “acrylic”? Does applicant mean a (meth)acrylate compound having hydroxyl functionality? With respect to “glycidyl acrylate... $\beta$ -methyl acrylate”, epoxy acrylate has been previously recited and  $\beta$ -methyl acrylate has been previously recited.

In claims 3 and 4, the use of the word “obtainable” instead of “obtained” renders the claim indefinite because it is not clear whether applicant intends to claim a dendritic core polymer obtained by the process set forth or not.

In claim 5, it is not clear which molecular weight applicant intends to claim.

Claim 13 is confusing for the same reason as set forth for claim 1.

Claim 15 is not clear because it is not clear what total weight the % by weight is based upon. Does applicant intend to recite based on the total weight of solid polymers, oligomers, monomers and additional optional components present in the composition? It is further noted that there is no requirement that the photoinitiator be present in the composition in any amount.

Claim 18 fails to clearly recite alternative oligomers or polymers. Applicant could recite alternatives by reciting “unsaturated polyester, unsaturated polyether, polyester acrylate, polyether acrylate...or glycidyl  $\beta$ -methyl acrylate”. Applicant could set forth a Markush group “selected from the group consisting of unsaturated polyester, unsaturated polyether, polyester acrylate...and glycidyl  $\beta$ -methyl acrylate”.

Claims 19 and 20 do not clearly recite whether applicant intends to claim a radiation curable coating or a UV curable industrial coating or to claim an ink composition or a UV curable printing ink composition.

Claims 17, 18, 19 and 20 provide for the use of “an amphiphilic dendritic polymer...oligomer or polymer”, but, since the claim does not set forth any steps involved in the

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method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 17-20 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an

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international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Martin et al (7,094,826, having an effective filing date of 03-31-2003 or WO 02/32982, published 04-25-2002). Martin et al disclose an aqueous coating composition comprising a crosslinkable polyester dendritic macromolecule containing hydrophilic water-dispersing groups, fatty acid autooxidizable groups and that can have methacryloyl unsaturated end groups (See formula (i) and column 6, line 6, to column 8, line 45, especially column 7, lines 14-17). The aqueous coating compositions may contain a crosslinkable oligomer other than the polyester macromolecule, a non-crosslinkable oligomer, a dispersed polymer, a co-solvent and water (column 20, lines 28-42). A dispersed polymer having crosslinkable groups, such as (meth)acryloyl groups, is disclosed (column 15, line 3, to column 16, line 55). The crosslinkable polyester macromolecule can be diluted with vinyl monomers (column 18, lines 7-15). The Examples disclose preparation of a poly-alkoxylated adduct of methoxypolyethylene glycol and succinic anhydride in column 27, lines 1-12. A hyperbranched polyester prepared from Boltorn H20® and the adduct are taught in column 27-28 and Table 1. The aqueous compositions disclosed by Martin et al wherein the crosslinkable dendritic polyester macromolecule is obtained by reacting hydroxyl groups with a monocarboxylic acid and the disclosed adduct and wherein the dispersed polymer has radiation curable groups anticipate the instant claims.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Haggman et al (7,091,308) or equivalent WO 03/062306, published 07-31-2003, disclose a chain extended dendritic polyether wherein the core polymer is a polyhydric dendritic polyether and the chain extension is obtained by addition of at least one alkylene oxide to at least one hydroxyl group in the core polymer. See columns 4 to 6 of US '308. Haggman et al teach that the dendritic polyether is useful in waterborne coatings, as a water dispersible resin and in radiation curing coatings (column 6, lines 25-27 and line 34). Examples 7 and 8 disclose a chain extended polyether acrylate. Example 11 discloses a composition of chain extended polyether acrylate, alkoxyated pentaerythritol acrylate and photoinitiator. See Table 2 for properties thereof. The difference from the instantly claimed composition is that Haggman et al do not teach reacting at least one of the terminal hydroxy groups in the dendritic core polymer with an adduct of a monoalkylated polyethylene glycol and a dicarboxylic acid or its anhydride.

Jonsson et al (7,235,600), having an effective filing date of 01-28-2005, or equivalent SE 0202436-2, published in English 08-19-2003, disclose a waterborne copolymer dispersion comprising an alkenyl functional dendritic polymer and exhibiting improved blocking properties. The dendritic polymer is built up from a dendritic core polymer, optionally chain extended, and an alkenyl functional compound. See page 2, 3rd paragraph, to page 4, 1<sup>st</sup> paragraph. Example 1 discloses reacting dendritic polyester Boltorn H20®, corresponding to the hydroxyfunctional dendritic polyester having at least four terminal hydroxy groups in applicant's Example 2, with

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acrylic acid. Example 2 teaches reaction with maleic anhydride, Example 3 teaches reaction with an adduct of trimethylolpropane diallylether and succinic anhydride and Example 4 teaches reaction with a tall oil fatty acid. An aqueous composition comprising the dendritic polymer, water and acrylate monomers is taught in Example 7, lines 39-46. See the claims. Jonsson et al do not teach reacting at least one of the terminal hydroxy groups in the dendritic core polymer with an adduct of a monoalkylated polyethylene glycol and a dicarboxylic acid or its anhydride. Jonsson et al do not teach the nonamphiphilic radiation curable oligomers or polymers set forth in instant claim 1 as alternatives to the polymerizable monomers, such as the acrylate monomers used in the composition disclosed in Example 7.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Susan W. Berman/ whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB  
11/14/2008

/Susan W Berman/  
Primary Examiner  
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